IN THE CLAIMS

Please cancel claims 1 and 8 without prejudice.

Please amend claims 2, 6, 9, and 13 as indicated below.

Please add new claims 14-17 as indicated below.

1. (Canceled)

2. (Currently Amended) ~~The method of claim 1 further~~ A method comprising:

establishing a plurality of transmission time slots, each time slot corresponding to one of a plurality of optical transmitters coupled to a head end via a passive optical network (PON) splitter;

forming a bit interleaved optical data stream at the PON splitter based on a plurality of optical bits transmitted by the plurality of optical transmitters during a respective time slot associated with each of the optical transmitters; and

transmitting the bit interleaved optical data stream from the PON splitter to the head end over an optical network.

3. (Original) The method of claim 2 further comprising:

enabling each of the plurality of optical transmitters to transmit an optical bit during its corresponding time slot.

4. (Original) The method of claim 3 further comprising:

adding an additional optical transmitter to the optical network.

5. (Original) The method of claim 2 wherein at least one of the plurality of optical transmitters is a vertical cavity surface emitting laser.

6. (Currently Amended) A network comprising:

a head end[[,]];

a passive optical network (PON) splitter coupled to the head end; and

a plurality of transmitters coupled to the head end via the PON splitter splitter, each of the plurality of transmitters are enabled to transmit an optical bit during an established time slot corresponding to said each transmitter to the PON splitter to create a bit interleaved optical data stream, wherein the bit interleaved optical data stream is transmitted from the PON splitter to the head end.

7. (Original) The network defined in Claim 6 wherein at least one of the plurality of transmitters comprises a vertical cavity surface emitting laser.

8. (Canceled)

9. (Currently Amended) An apparatus comprising:

means for establishing a plurality of transmission time slots, each time slot corresponding to one of a plurality of optical transmitters coupled to a head end via a passive optical network (PON) splitter; ~~and~~

means for forming a bit interleaved optical stream at the PON splitter based on a plurality of optical bits transmitted by the plurality of optical transmitters during a respective time slot associated with each of the optical transmitters; and

means for transmitting a bit interleaved optical data stream from the PON splitter to the head end over ~~onto~~ an optical network.

10. (Original) The apparatus of claim 9 further comprising:

means for enabling each optical transmitter to transmit an optical bit during its corresponding time slot.

11. (Original) The apparatus of claim 10 further comprising:

means for adding an additional optical transmitter to the optical network.

A1 cont

12. (Original) The apparatus of claim 11, wherein at least one optical transmitter is a vertical cavity surface emitting laser.

13. (Currently Amended) A computer-readable medium, which, when executed by a processing system, enables the system to perform:

establishing a plurality of transmission time slots, each time slot corresponding to one of a plurality of optical transmitters coupled to a head end via a passive optical network (PON) splitter;

forming a bit interleaved optical stream at the PON splitter based on a plurality of optical bits transmitted by the plurality of optical transmitters during a respective time slot associated with each of the optical transmitters; and

transmitting the bit interleaved optical data stream from the PON splitter to the head end over an optical network.

~~establishing a transmission time slot for one of a plurality of transmitters in an optical network; and~~

~~enabling the one optical transmitter to transmit an optical bit only during the transmission time slot, so that the plurality of transmitters transmit a bit interleaved optical data stream on the optical network.~~

14. (New) The method of claim 2, wherein each of the plurality of optical transmitters is assigned an up to 10 nanosecond time slot, and wherein each bit of the bit interleaved optical data stream is transmitted via an up to 2.5 ns pulse over the optical network.

a1 cancel

15. (New) The method of claim 2, further comprising increasing transmitting power for each bit of the bit interleaved optical data stream, while maintaining an average transmitting power of the bit interleaved optical data stream below a predetermined threshold that would cause a human eye damage.

16. (New) The network of claim 6, wherein each of the plurality of optical transmitters is assigned an up to 10 nanosecond time slot, and wherein each bit of the bit interleaved optical data stream is transmitted via an up to 2.5 ns pulse over the optical network.

17. (New) The network of claim 6, wherein each bit of the bit interleaved optical data stream is transmitted via a pulse having a duty cycle such that, while carrying a relative high transmitting power, an average transmitting power of the bit interleaved optical data stream is maintained below a predetermined threshold that would cause a human eye damage.